Remarks/Arguments

In the non-final Office Action dated September 16, 2008, it is noted that claims 1-7, 9, and 11-13 are pending; that all claims stand rejected under 35 U.S.C. §102; that the claim of foreign priority under 35 U.S.C. §119 has been acknowledged; and that all certified copies of the priority documents have been received.

By this response, claims 1-5 and 9 have been amended to eliminate all reference signs. Claims 8 and 10 had been cancelled in a previous paper without prejudice. The amendments to the claims are proper and justified. No new matter has been added.

Rejection of Claims 1-7, 9, and 11-13 under 35 U.S.C. §102

Claims 1-7, 9, and 11-13 stand rejected under 35 U.S.C. §102 as being anticipated by U.S. Patent 6,700,990 to Rhoads (hereinafter "*Rhoads*"). This rejection is respectfully traversed.

Claims 1, 9, and 13 are independent base claims. Claims 2-7 depend ultimately from claim 1; and claims 11-12 depend directly from claim 9. Independent claims 1, 9, and 13 include substantially similar limitations. In view of this similarity and for the sake of brevity for this response, the following remarks will be addressed to claim 1, but should be understood to apply equally to claims 9 and 13.

Claim 1 recites a method of processing a multimedia signal comprising a watermark signal, wherein the method comprises the steps of:

> *A method of detecting a watermark in an information signal, comprising:*
>
> *deriving a set of correlation results by correlating the information signal with a watermark for each of a plurality of relative positions of the information signal with respect to the watermark;*
>
> *calculating a metric which is based on a cluster of the results selected from the overall set of results; and*
>
> *comparing the calculated metric with a cluster threshold value which is indicative of the cluster representing a correlation peak.*

Rhoads does not teach, show, or suggest the limitations in claim 1. A prima facie case of anticipation based on Rhoads has not been established. The cited portions of Rhoads do not anticipate claim 1 because they are unrelated to each other, because they come from the completely different processes discussed in Rhoads, and because the same process part from Rhoads is applied to different limitations in the claims.

In rejecting the "deriving" and "comparing" limitations in the claims, the present Office Action employs identical descriptions of a part of a process in Rhoads cited from different places in Rhoads. In col. 7, lines 50-60, which is utilized in rejecting the "comparing" limitation in the claims, Rhoads describes a process of removing the content from the received watermarked signal to produce the received version of the embedded code signals as follows:

We can call the suspect signal normalized and registered at this point, or just normalized for convenience.

The newly matched pair then has the original signal subtracted from the normalized suspect signal to produce a difference signal. The difference signal is then cross-correlated with each of the N individual embedded code signals and the peak cross-correlation value recorded. The first four bit code ('0101') is used as a calibrator both on the mean values of the zero value and the one value, and on further registration of the two signals if a finer signal to noise ratio is desired (i.e., the optimal separation of the 0101 signal will indicate an optimal registration of the two signals and will also indicate the probable existence of the N-bit identification signal being present.)

But this same part of the process by Rhoads is used to reject the earlier "deriving" limitation, even though cited from a different portion of Rhoads, namely, from col. 11, lines 35-45, reproduced below as follows:

The next step is to subtract the original digital image from the newly normalized suspect image only within the standard mask region. This new image is called the difference image.

Then we step through all 32 individual random embedded images, doing a local cross-correlation between the masked difference image and the masked individual embedded image. 'Local' refers to the idea that one need only start correlating over an offset region of +/-1 pixels of offset between the nominal registration points of the two images found during the search procedures above. The peak correlation should be very close to the nominal registration point of 0,0 offset, and we can add the 3 by 3 correlation values together to give one grand correlation value for each of the 32 individual bits of our 32-bit identification word.

Upon a careful inspection, it is obvious that the same process part is being explained in both sections. The same process part described for Rhoads is being applied to two different limitations in the present claims. Rhoads is describing the subtraction of the original image from the realigned suspect image – thereby leaving only the received version of the embedded code signals, i.e., the received watermarks – followed by a comparison or correlation of the received version of the embedded code signals with the actual stored version of the embedded code signals. How can the same part of a process in Rhoads apply to two very different steps, namely, "deriving a set of correlation results by correlating the information signal with a watermark for each of a plurality of relative positions of the information signal with respect to the watermark" and "comparing the calculated metric with a cluster threshold value which is indicative of the

cluster representing a correlation peak"? It simply cannot. This use of the same process part of Rhoads for rejecting two completely separate and different steps in the method of claim 1 is not proper and accurate. Accordingly, the rejection of the claims does not establish a prima facie case of anticipation or obviousness and should be withdrawn.

Claim 1 calls for the correlation of the information signal in which a watermark is present with the watermark over a plurality of relative positions in the information signal in order to derive a set of correlation results. *See preamble and "deriving" limitation in claim 1.* But the cited portions of Rhoads do not meet the claimed limitations. Rhoads is correlating two signals that are completely different from the signals called for in the claim. Specifically, Rhoads correlates a difference signal with the embedded code signals, where the difference signal represents the received version of the embedded code signals. *See the cited portions of Rhoads from col. 7 and 11 reproduced above.* Contrary to the apparent teachings of Rhoads, the claims call for the set of correlation results to be derived by correlating the <u>information signal</u> with a watermark, where a watermark is embedded in the information signal. While both the claim and the cited reference describe a correlation operation, the signals used in that correlation and the results produced are completely and unmistakably different. Thus, Rhoads does not teach, show, or suggest all the limitations in the claims.

In rejecting the "calculating" limitation, the present Office Action relies on portions of Rhoads from cols. 78 and 93. Neither of these sections relates to or follows from the process described in cols. 7 and 11 of Rhoads as described and reproduced above. Both are processes unto themselves without any stated or described connection to the described process in cols. 7 and 11 of Rhoads.

The cited portion of col. 78 relates to a "Method for embedding subliminal registration patterns into images and other signals". *See Rhoads at col. 74, lines 61-63.* Particularly, the cited portion refers to the process of finding a pattern of graticular marks or fiducial marks in a suspect image. The suspect image would apparently correspond to the claimed information signal based on any reasonable reading of Rhoads. In this registration pattern method of Rhoads, there is no "deriving a set of correlation results ..." preceding a metric calculation as called for in the claims. Even if the vectors produced in col. 78 of Rhoads correspond to a metric, there is no express or implied teaching in Rhoads that the vectors are produced on the basis of a cluster of correlation results, where the set of correlation results are derived by correlating the information signal with the watermark for each of a plurality of relative positions of the

information signal with respect to the watermarks, as defined in the claims. There is simply no teaching that a correlation precedes the vector calculation. Moreover, there is no teaching in Rhoads about any relationship between the process in cols. 7 and 11 involving correlation and the process of producing the vectors in col. 78. These teachings appear to be mutually exclusive of each other. Accordingly, the rejection of the claims does not establish a prima facie case of anticipation or obviousness and should be withdrawn.

Even if the processes in cols. 7, 11, and 78 were somehow related, the combination of these teachings would not meet the claimed limitation. In the "calculating" step of claim 1, it is specifically recited that the metric being calculated "is based on a cluster of the results selected from the overall set of results." The results are the "set of correlation results" "derived ... by correlating the information signal with the watermark". There is no teaching, showing, or suggestion in Rhoads that his vectors are produced in any way on the basis of correlation results derived from a correlation of the information signal with the watermark. Thus, Rhoads does not teach, show, or suggest all the limitations in the claims.

The cited portion of col. 93 relates to perceptually adaptive signing. *See Rhoads at col. 91.* The signing techniques described therein involve methods for determining which portion of an image is best suited for receiving a watermark so that the watermark will be imperceptible and unannoying to the viewer while still being detectable through a recovery process. The particular portion cited in col. 93 deals with a concept of local hiding potential. Local hiding potential is used to determine whether a particular region of the actual image, that is, the unwatermarked image, would be a good candidate region in which to embed a watermark. The process of determining a local hiding potential is completely unrelated to the watermark detection steps taught in the other cited portions of Rhoads discussed above. There is no teaching, showing, or suggestion in Rhoads that this procedure is applied to any steps even remotely resembling the "deriving" and "comparing" limitations in claim 1. Accordingly, the rejection of the claims does not establish a prima facie case of anticipation or obviousness and should be withdrawn.

In view of the remarks above and in view of the similar limitations in the independent claims, it is understood that Rhoads fails to teach all the elements of independent claims 1, 9, and 13. Since the dependent claims include all the limitations of their respective independent base claims, it is also understood that Rhoads also fails to teach all the elements of claims 2-7 and 11-12.

In light of these remarks, it is believed that Rhoads does not anticipate or make obvious claims 1-7, 9, and 11-13. Thus, it is submitted that claims 1-7, 9, and 11-13 are allowable under both 35 U.S.C. §102 and 35 U.S.C. §103.

Conclusion

In view of the foregoing, it is respectfully submitted that all the claims pending in this patent application are in condition for allowance. Reconsideration and allowance of all the claims are respectfully solicited.

In the event there are any errors with respect to the fees for this response or any other papers related to this response, the Director is hereby given permission to charge any shortages and credit any overcharges of any fees required for this submission to Deposit Account No. 14-1270.

Respectfully submitted,

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